# *Environmental Toolbox*

# General Awareness Training Module

Environmental Officer

# Environmental Considerations in Operations (ECOps)

Sound environmental management during military operations enables the mission by enhancing force protection and reducing the logistical burden on the force

# Overview of This Briefing

- Environmental officer's objectives
- Why environmental considerations matter
- Environmental officer responsibilities during:
  - Planning, pre-deployment
  - Deployment
  - Rotation of forces
  - Redeployment, post-deployment
- Examples of good and bad practices
- Listing of technical modules on specific topics

# Definition

**Environmental Considerations in Operations** are measures or processes put in place to avoid or minimize potentially adverse environmental impacts during military operations.

Focus areas addressed in this toolbox*:

- Solid waste management
- Hazardous material and hazardous waste management
- Water and wastewater management
- Spill prevention and response planning
- Natural resource and cultural property protection

ECOps helps you to use your resources in a wise manner to better support your mission

**Note*: while energy use is not addressed specifically in this toolbox, it is important for everyone to use energy responsibly!

# Why ECOps Matters

- Enhances force protection
  - Protects soldier health
  - Reduces risk to supply convoys
- Reduces logistical requirements and costs
- Reduces legal and financial liability
- Promotes sustainability
  - For the current mission
  - For future deployments
  - For the host nation
- Potential geopolitical impacts
- Wins hearts and minds (psychologica S)

# Environmental Officer's Objectives

- Integrate ECOps into plans and procedures within the camp
- Advocate for and execute ECOps at the tactical level
- Assist the commander in mission accomplishment by
  - sustaining readiness and supporting mission execution
  - protecting the safety and health of deploying troops, host nation troops, civilian personnel, and local nationals
  - facilitating coalition and international cooperation and interoperability
  - ensuring legal compliance
  - strengthening civil relations, and
  - promoting efficient use of and conservation of valuable natural resources

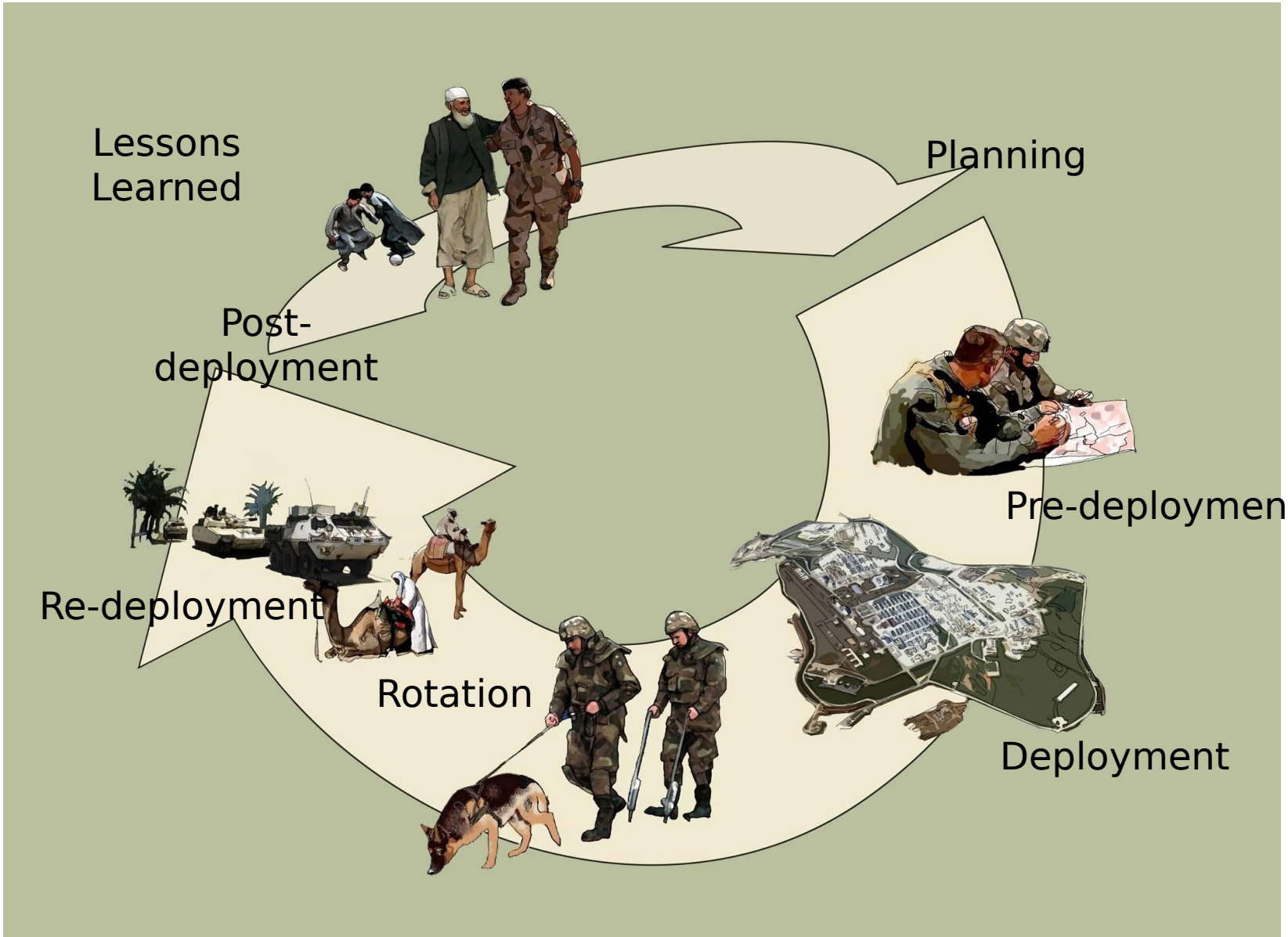
# Laws and Regulations

- International laws and treaties
- Agreements pertaining to deploying forces such as Status of Forces Agreements (SOFAs)
- Own nation’s laws
- Host nation laws
- UN, NATO, EU, or coalition command standards – who controls the space?
- Mission regulations

Compare and understand what governs the current operation.

Be prepared to implement the highest applicable environmental standard.

# ECOps in the Life Cycle of Military Operations



# Strategic Level Planning

The environmental annex of the Operation Plan (OPLAN) is based on an analysis of:

- Legal framework
- Critical environmental aspects that could constrain the effective achievement of the mission
- Critical environmental aspects that could affect force protection or increase financial risks
- The EO must be familiar with this environmental guidance to incorporate into pre-deployment planning

# Pre-Deployment

- When your unit is the initial entry unit
  - Include environmental capability in recce/advance party
  - Conduct Environmental Baseline Survey (EBS). *This influences site selection, camp layout, feasible environmental systems*
  - Understand mission, duration, population, quality of life. *This determines environmental systems that will be implemented*
- When your unit assumes responsibility from a previous unit
  - Review EBS
  - Review master plan, standard operating procedures (SOPs)
  - Review contracts and existing documentation
  - Review intelligence reports

You should ensure all forces are informed about their environmental responsibilities

# Pre-Deployment

- Plan for your end state: will base be closed/transferred or rotated with replacement unit?
- Plan for surges or drawdowns
  - Flexible systems
  - Scalable for changes in mission
- Obtain information about the host country and local community from your own government or open sources
  - Friendly country or hostile? This affects force protection and security requirements
  - Existing infrastructure for military use
  - Local materials, methods
  - Technical skills labor pool
  - Community relations, economic impact

Understand and respect local cultural and environmental norms and conditions

# Pre-Deployment

Training

- Mission-specific pre-deployment training should include relevant environmental aspects
- Mission-specific environmental skills training (including on equipment) for personnel required to execute specific environmental duties, including reporting procedures

During the movement of forces, consider:

- Risk and impact management
- Trans-boundary transportation of hazardous material (HM) and hazardous waste (HW)
- Safe handling of HM and HW during movement
- Incident reporting procedures

Click here for link to task check-list during this stage

# Deployment

- Complete a detailed EBS at the specific site selected
- Develop detailed planning for day-to-day operations and requirements of the base
  - Solid waste management
  - Hazardous material and hazardous waste management
  - Water and wastewater management
  - Spill prevention and response planning
  - Natural resource and cultural property protection
- Create situation-driven plans and SOPs, which can make up an overall environmental management plan
- Facilitate the Environmental Management Board (EMB)
- Update environmental intelligence

# Deployment

- Provide input for infrastructure
- Help manage contracts
- Implement and document plans and procedures
- Provide training, enhance environmental awareness
- Monitor environmental status
- Ensure proper disposition of waste and excess materials
- Test contingency plans

Click here for link to task check-list during this stage

# Documentation during Deployment

- Types of documentation
  - Scheduled reports
  - Incident reports
  - Feedback reports
  - Closure reports
- Recordkeeping requirements
  - Maintain and file all documents logically, ensure accessibility
  - Archive for historical record

**Don’t forget - relevant information should be used to update maps and management information!**

# Rotation of Forces

- Units moving into or out of the area of operations are in one of three states: mobilization, handing and taking over, or demobilization
- Proper “Handing and Taking Over” requires good communication
  - Plan for surge capacity
  - Procedures must be completely understood by relieving forces
  - Must be a structured process
  - Documentation is critical to ensure continuity

Click here for link to task check-list during this stage

# Rotation of Forces

During “handing and taking over,” environmental documentation and records developed by the initial deploying force or follow-on units will be turned over to the relieving EO. They should be relevant, well organized and easily accessible. These records include:

- Operations and Fragmentary Orders
- Management Plans
- SOPs
- Contingency Plans
- Reports and Management Information (e.g., EBS)
- Environmental Risk Analyses
- Management Directives/Duty Sheets/Command Delegations
- Logistics, Assets and Stores tracking (e.g., HM in/out flow)
- Contracts

The job is not over until the paperwork is passed to the relieving unit!

# Re-Deployment

- Disposing of obsolete equipment
- Decontaminating equipment and vehicles
- Environmental rehabilitation requirements and clearing of facilities
- Environmental Closure Surveys and Reports
- Handing back of land/facilities/ property
- Termination of contracts

**Closure documents should be coordinated with the appropriate legal advisors**

Click here for link to task check-list during this stage

# Post-Deployment and Lessons Learned

- Conduct lessons learned or After Action Review; provide report
  - Document what worked well and what did not work well
  - Make recommendations for future improvements
- Forward information to training developers for inclusion in future pre-deployment training

# Good and Bad Examples

The following slides show a number of pictures of both good and bad environmental practices, from camp set-up to handling different kinds of wastes to protecting natural resources and cultural property

# Good Base Camp Set-up

Rudimentary bases, but with good separation of functional areas

Semi-permanent base, with good separation of functional areas

# Bad Hazardous Waste Storage

Drums not labeled, materials not segregated, no secondary containment, no covered storage

No secondary containment; leakage has contaminated soil

Uses secondary containment, but it is too small and not durable. Canisters improperly stored

# Better Hazardous Waste Storage

Good secondary containment, but should be labeled and covered

Well marked, fenced off. Good secondary containment, protective gear handy

Wastes well marked, segregated; good overhead protection. Secondary containment could be better.

# Good Hazardous Waste Storage

Low cost solutions offering good secondary containment, overhead protection, segregated and labeled.

# Good Hazardous Waste Storage in Field Conditions

Tarps and sandbags as secondary containment, netting and tarps as overhead protection

# Good Hazardous Material Handling

Use of protective clothing and equipment

# Bad Hazardous Material/Waste Storage (Battery Storage)

Batteries leaked acid, no secondary containment

Battery placed on top of crumbling storm water drain

# Bad Solid Waste Storage

Rusting and leaking containers

No segregation of materials

# Solid Waste Disposal

Open burn pit often not preferred, but rules are appropriately posted

BURN PIT RULES
LEADERS, THE FOLLOWING STRICTLY ENFORCED:
ALL TRASH MUST GO INSIDE THE BURN PIT
NO WOOD PERMITTED IN THE PIT
NO METAL PERMITTED IN THE PIT
NO FLAMEABLES PERMITTED IN THE PIT
DO NOT START FIRES
5 MPH---NO EXCEPTIONS
VIOLATORS WILL BE REPORTED
THANK YOU FOR YOUR SUPPORT.
BASE CAMP COMMANDER

# Incineration

Trash not contained in barrels or bags prior to disposal

# Bad Spill Containment

Oil leaking onto ground, no containment or clean-up

Oil contamination; taking samples to determine extent of contamination

# Good Spill Response Plan

Spill contained

Oil cleaned up using sand to absorb it

Sand placed in lidded container

# Good Spill Response Plan

Instructions posted in proper location, covered in plastic to protect it from weather

Ruptured bladder

Intact bladder

Good containment of oil spill—use of liner and raised sides

# Bad Wastewater Disposal

Open dumping of wastewater

Broken waste water pipes

Resulting sewage discharge

# Proper Vehicle Procedures

Drive on established roads, except when otherwise instructed

Use only approved vehicle washracks

Don’t drive through wetlands

# Cultural Property Protection

Damage done to burial site

Proper marking of burial site, old well

# Natural Resource Protection

# Technical Modules

- Detailed modules on the following subjects are available in the technical module section of this toolbox:
  - Solid waste management
  - Hazardous material and hazardous waste management
  - Water and wastewater management
  - Spill prevention and response planning
  - Cultural property protection
  - Natural resource protection

# Conclusion

Your actions as an environmental officer will have contributed to the mission's goals and its success by

- reducing adverse impacts to the health of the force and the local population
- reducing adverse impacts to the environment
- enhancing the reputation of your military and your nation

# EO TASK LISTS

The following slides include the EO task lists by the operational phase.

# Environmental Officer Task List for Predeployment

Click here for link back to presentation

| Tasks during Predeployment | Initial activity to prepare to deploy with main force |
|---|---|
| **Preparation** | |
| Environmental technical equipment and vehicle-specific equipment | Check |
| Environmental Plans in place | Check |
| Environmental mission specific readiness | Check |
| Record keeping documentation in place | Check |
| Environmental related permits/licences in place | Check |
| Decontamination of vehicles and equipment | Check |
| Compliance with customs regulations in terms of plant material and animal transport | Control |
| Environmental Intelligence | Confirm |
| Liaison/co-ordination platforms | Establish with host nation |
| EBS | Do complete EBS |
| Demarcating environmentally sensitive areas on maps | Execute |
| Existing and new contracts | Environmental inputs |
| Contract Management | Environmental inputs |
| **Mission-Specific Preparation** | |
| Environmental information from Operations Order available for distribution in terms of awareness | Convey Content |
| **Mission-Specific Environmental Skills Training** | |
| Evaluation towards mission readiness | Check |
| Re-train | Train |
| Documentation | Check |

# Environmental Officer Task List During Deployment and Rotation of Forces

Click here for link back to presentation

| Mobilisation Tasks | Initial activity to deploy with main force | Activity preceding rotation of forces |
|---|---|---|
| **Preparation** | | |
| Environmental technical equipment and vehicle-specific equipment | Check | Update |
| Environmental Plans in place | Check | Update |
| Environmental mission specific readiness | Check | Update |
| Record keeping documentation in place | Check | Update |
| Environmental related permits/licences in place | Check | Review/renew/ confirm |
| Decontamination of vehicles and equipment | Check | Check |
| Compliance with customs regulations in terms of plant material and animal transport | Control | Control |
| Environmental Intelligence | Confirm | Update |
| Liaison/co-ordination platforms | Establish with host nation | Between in going and outgoing forces |
| EBS | Do complete EBS | Update |
| Demarcating environmentally sensitive areas on maps | Execute | Confirm |
| Existing and new contracts | Environmental inputs | Review and manage |
| Contract Management | Environmental inputs | Confirm procedures |
| **Mission-Specific Preparation** | | |
| Environmental information from Operations Order available for distribution in terms of awareness | Convey Content | Convey Content |
| **Mission-Specific Environmental Skills Training** | | |
| Evaluation towards mission readiness | Check | Check |
| Re-train | Train | Train |

# Environmental Officer Tasks during Force Rotation Demobilization

Click here for link back to presentation

Click here for additional tasks

| Typical Tasks | Rotation of forces |
|---|---|
| Mapping of infrastructure and sites of impact | Confirm status during handing and taking over |
| Water purification, sewerage facilities, dumping sites, borrow pits, etc. | Confirm status during handing and taking over |
| Environmental technical equipment | Confirm application and serviceability |
| Environmental implications of disposal decisions of obsolete equipment | Confirm procedures |
| Environmental Clean up/ Clearing of: | Confirm status during handing and taking over |
| - Facilities | Confirm status during handing and taking over |
| - Unserviceable or redundant equipment/stores | Confirm status during handing and taking over |
| - Unexploded Ordnance (UXOs) | Confirm status during handing and taking over |
| - Emptying of fuel storage | Confirm status during handing and taking over |
| - Remediate fuel spills, etc. | Confirm status during handing and taking over |
| Decontamination of equipment/vehicles | Establish in both host and home country |

# Environmental Officer Tasks during Force Rotation Demobilization (Con't)

Click here for link back to presentation

| Typical Tasks | Rotation of forces |
|---|---|
| Compliance with customs regulations for plant material and animal transport | Control |
| Policy and procedures | Confirm and implement |
| EBS | Update |
| Transfer of property/land/ facilities (dump site) | Between incoming and outgoing forces |
| Back loading of waste | Handle according to Environmental Management Plan |
| Transfer/Agreement with regards to cultural resources created in the host nation during ops | Confirm status during handing and taking over |
| Implement/terminate agreements | Confirm status during handing and taking over |
| - Finalising and Closing of contracts | Confirm status during handing and taking over |
| - Follow up responsibilities | Confirm status during handing and taking over |
| Documentation for transportation | Transport permits e.g., Shipment manifest |
| Documentation (general) | N/A |

# Environmental Officer Task Comparison during Demobilizatio

Click here for link back to presentation

Click here for additional tasks

| Tasks | Rotation of forces | Re-deployment |
|---|---|---|
| Mapping of infrastructure and sites of impact | Confirm status during handing and taking over | Confirm |
| Water purification, sewerage facilities, dumping sites, borrow pits, etc. | Confirm status during handing and taking over | Closure |
| Environmental technical equipment | Confirm application and serviceability | Improve equipment according to new technological requirements |
| Environmental implications of disposal decisions of obsolete equipment | Confirm procedures | Environmental Inputs |
| Environmental Clean up/ Clearing of: | Confirm status during handing and taking over | Implement Rehabilitation Plan |
| - Facilities | Confirm status during handing and taking over | Implement Rehabilitation Plan |
| - Unserviceable or redundant equipment/stores | Confirm status during handing and taking over | Repair or Dispose |
| - Unexploded Ordnance (UXOs) | Confirm status during handing and taking over | Implement Rehabilitation Plan |
| - Emptying of fuel storage | Confirm status during handing and taking over | Implement Rehabilitation Plan |
| - Remediate fuel spills, etc. | Confirm status during handing and taking over | Implement Rehabilitation Plan |
| Decontamination of | Establish in both host and home | Establish in both host and |

# Environmental Officer Task Comparison during Demobilization (Con't)

Click here for link back to presentation

| Demobilisation | Rotation of forces | Re-deployment |
|---|---|---|
| Decontamination of equipment/vehicles | Establish in both host and home country | Establish in both host and home country |
| Compliance with customs regulations for plant material and animal transport | Control | Control |
| Policy and procedures | Confirm and implement | Amend and update |
| EBS | Update | Finalise and exit |
| Transfer of property/land/ facilities (dump site) | Between incoming and outgoing forces | Back to host nation |
| Back loading of waste | Handle according to Environmental Management Plan | Handle according to home country legislation |
| Transfer/Agreement with regards to cultural resources created in the host nation during ops | Confirm status during handing and taking over | Environmental Inputs and liaison with host nation |
| Implement/terminate agreements | Confirm status during handing and taking over | Terminate |
| - Finalising and Closing of contracts | Confirm status during handing and taking over | Closure |
| - Follow up responsibilities | Confirm status during handing and taking over | Liaison with host nation on possible long term rehabilitation |
| Documentation for transportation | Transport permits e.g., Shipment manifest | Transport permits e.g., Shipment manifest |